

CLAIMS

1. A lithographic printing blank comprising a coating deposited from aqueous fluid onto a substrate, the coating comprising:
 - polyvinyl alcohol;
 - 5 polyacrylic acid;
 - hydrophobic water-based emulsion with pH of 7 or below;
 - aminoplast; and
 - at least one wetting agent.
- 10 2. The lithographic printing blank of claim 1, wherein the coating is hydrophilic.
3. The lithographic printing blank of claim 1, wherein the coating is oleophilic.
- 15 4. The lithographic printing blank of claim 1, wherein the aminoplast is a urea-formaldehyde resin.
5. The lithographic printing blank of claim 1, wherein the hydrophobic water-based emulsion has a phenol formaldehyde as its internal phase.
- 20 6. The lithographic printing blank of claim 1, wherein the hydrophobic water-based emulsion has an acrylic polymer or copolymer as its internal phase.

7. The lithographic printing blank of claim 1, wherein the coating has a dry coating weight between 1 gram per square meter and 4 grams per square meter.
- 5 8. The lithographic printing blank of claim 1, wherein the polyacrylic acid is present at between 20% and 60% of the dry coating weight.
9. The lithographic printing blank of claim 8, wherein the polyacrylic acid is present at between 20% and 40% of the dry coating weight.
- 10 10. The lithographic printing blank of claim 1, wherein the polyvinyl alcohol is present at between 1% and 15% of the dry coating weight.
11. The lithographic printing blank of claim 10, wherein the polyvinyl alcohol is present at between 3% and 6% of the dry coating weight.
- 15 12. The lithographic printing blank of claim 1, wherein the hydrophobic water-based emulsion is present at between 25% and 55% of the dry coating weight.
- 20 13. The lithographic printing blank of claim 1, wherein the wetting agent comprises silicone surfactant.

14. The lithographic printing blank of claim 1, wherein the at least one wetting agent is present at between 0.5% and 7% of the dry coating weight.

5 15. The lithographic printing blank of claim 2, wherein the aminoplast is present at not more than 10% of the dry coating weight.

16. The lithographic printing blank of claim 15, wherein the aminoplast is present at between 2% and 7% of the dry coating weight.

10 17. The lithographic printing blank of claim 3, wherein the aminoplast is present at between 10% and 20% of the dry coating weight.

18. The lithographic printing blank of claim 1, wherein the substrate comprises untreated aluminum.

15 19. The lithographic printing blank of claim 18, wherein the substrate comprises aluminum treated with phosphoric acid.

20 20. The lithographic printing blank of claim 18, wherein the substrate comprises anodized aluminum.

21. A method of preparing a lithographic printing plate, comprising the steps of:

providing a printing blank comprising a coating deposited from aqueous fluid onto a substrate, the coating comprising:

polyvinyl alcohol;

polyacrylic acid;

5 hydrophobic water-based emulsion with pH of 7 or below;

aminoplast; and

at least one wetting agent;

depositing aqueous ink-jet ink onto said coating in the form of an image,

10 whereby the imaged areas of said coating acquire oleophilic or hydrophilic properties which are opposite to the oleophilic or hydrophilic properties of said printing blank.

22. A method according to claim 21, additionally comprising the step of
15 heating said printing plate, after said step of depositing.

23. A method according to claim 21, whereby the aqueous ink-jet ink forms an oleophilic image.

20 24. A method according to claim 21, whereby the aqueous ink-jet ink forms a hydrophilic image.

25. A method according to claim 21, wherein the ink-jet ink contains a microencapsulated pigment.

26. A method according to claim 21, wherein the ink-jet ink contains a pigment and polymer binder.

27. A method according to claim 21, wherein the ink-jet ink contains a water soluble ingredient which switches the coating from being hydrophilic to oleophilic.

28. A method according to claim 21, wherein the ink-jet ink contains a water soluble ingredient which switches the coating from being oleophilic to hydrophilic.

29. The method of claim 28, wherein the substrate comprises aluminum treated with phosphoric acid.

30. The method of claim 28, wherein the substrate comprises anodized aluminum.

31. Ink-jet ink comprising switchable material.

32. The ink-jet ink of claim 31, wherein said switchable material comprises water-soluble ingredients.

5 33. The ink-jet ink of claim 31, wherein said switchable material is operable to switch a hydrophilic inked substrate to being oleophilic.

34. The ink-jet ink of claim 32, wherein said switchable material is ferric nitrate.

10 35. The ink-jet ink of claim 32, wherein said switchable material is a sulphonic acid.

36. The ink-jet ink of claim 31, wherein said switchable material is operable to switch an oleophilic inked substrate to being hydrophilic.

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37. The ink-jet ink of claim 35, wherein said switchable material is polyacrylic acid.

38. A lithographic wet printing process comprising the steps of:

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providing a lithographic printing plate comprising a substrate coated with a coating comprising:

polyvinyl alcohol;

polyacrylic acid;

hydrophobic water-based emulsion with pH of 7 or below;

aminoplast; and

at least one wetting agent;

said coating having been imaged using aqueous ink-jet ink, whereby the
5 imaged areas of said coating acquired oleophilic or hydrophilic properties

which are opposite to the oleophilic or hydrophilic properties of said
printing blank; and

using said lithographic printing plate in a wet-lithographic printing
press to produce printed impressions.

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39. The lithographic wet printing process of claim 38, wherein said substrate
comprises a master cylinder of said printing press.